IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kattesh V. Katti, et al

Serial No: 10/019,192

Filed: June 20, 2002 Examiner: Krass, Frederick F.

For: GOLD-CONTAINING CHEMOTHERAPEUTIC AGENTS

Our File No: 0994.00133

RESPONSE

Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450
Mail Stop NO FEE RESPONSE

Sir:

This is in response to the Office Action dated July 30, 2003, paper no. 9.

Claims 1-7 are currently pending in the application. Claims 1 and 5-7 are in independent form.

Claims 5-7 stand rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for the treatment of two specific types of digestive tract carcinomas (colon and gastric), does not reasonably provide enablement for the treatment of all cancers generally, nor the "prevention" of metastasis in any particular type of cancer, nor "arresting" cell growth in any particular cell type.

The Office Action states that there is no known anti-cancer agent, which is effective against all cancers. The presently claimed compounds and methods of their use have been tested in numerous different types of cancer, for example, prostate, colon, and gastric. Therefore, the fact that multiple, unrelated

types of cancer have been treated successfully using the compounds is indicative of the ability of the compounds to be utilized broadly for various forms of cancer. It is respectfully submitted that the data presented thus far is indicative of the use of the compounds of the presently claimed invention and methods of using the same in a number of different types of cancer, and thus should not be limited at this time.

The Office Action states on page 4 that the prevention or cure of cancer is highly unpredictable. This is completely accurate and undisputed by Applicant. The presently pending claims relate to treating cancer, preventing metastasis, and preventing or arresting cell growth. There is no disclosure for the prevention or cure of cancer; rather the presently pending claims recite methods for prevention of the spread of cancer, or methods for the treatment of cancer. Prevention of metastasis of cancer is merely the prevention of the spread of cancer to other parts of the body. The compounds of the presently claimed invention can be used in such a method because the compounds prevent cancer from spreading to other parts of the body. Prevention of metastasis is not considered a cure for cancer; but instead, a treatment of cancer. Therefore, the claims are not unduly broad and there is sufficient support in the specification as filed for the claims as presently pending.

Additional studies have been carried out with regard to treating prostate cancer with the compounds of the presently claimed invention, further establishing the use of the compounds and methods of the presently pending claims in treating prostate cancer as well as the cancers disclosed in the specification as filed. A copy of the results of the additional studies is enclosed herewith.

Based upon all of the above and the inclusion of the additional data, there is sufficient support for the claims as currently pending and reconsideration of the rejection is respectfully requested.

Claims 1-5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Katti, et al., patent in view of the Fricker reference. It is Hornbook Law that before two or more references may be combined to negative patentability of a claimed invention, at least one of the references must teach or suggest the benefits to be obtained by the combination. This statement of law was first set forth in the landmark case of Ex parte McCullom, 204 O.G. 1346; 1914 C.D. 70. This decision was rendered by Assistant Commissioner Newton upon appeal from the Examiner-in-Chief and dealt with the matter of combination of references. Since then many courts have, over the years, affirmed this doctrine.

The applicable law was more recently restated by the Court of Appeals for the Federal Circuit in the case of ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572,1577, 221 U.S.P.Q. 929 (Fed. Cir. 1984). In this case the Court stated, on page 933, as follows:

> "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103 teachings of references can be combined only if there is some suggestion or incentive to do so. The prior art of record fails to provide any such suggestion or incentive. Accordingly we hold that the court below erred as a matter of law in concluding that the claimed invention would have been obvious to one of ordinary skill in the art under Section 103."

This Doctrine was even more recently reaffirmed by the CAFC in Ashland Oil, Inc. v. Delta Resins and Refractories, Inc., et al., 776 F.2d 281,297, 227 U.S.P.Q. 657,667. As stated, the District Court concluded:

> "Obviousness, however, cannot be established by combining the teachings of the prior art to produce the claimed invention unless there was some teaching, suggestion, or incentive in this prior art which would have made such a combination appropriate."

The Court cited ACS Hospital Systems, Inc. in support of its ruling. This Doctrine was reaffirmed in In re Deuel, 34 USPQ2d 1210 (Fed. Cir. 1995).

The Office Action states that the Katti, et al. patent discloses hydroxyalkylphospine-gold complexes and suggests their use as cancer chemotherapeutic agents. The Office Action acknowledges that the patent does not disclose that the complexes can contain non-radioactive gold. While the patent discloses the use of the term "gold" broadly, the exemplified and preferred embodiments all use radioactive species. The Office Action has indicated that the specification implies the use of non-radioactive pharmaceuticals as at least preferred embodiment.

When read more specifically, the specification discloses at column 1, lines 35-45, that compounds that contain gold contain gold isotopes and these isotopes have been implicated as an important basis in the design of tumor-specific radiopharmaceuticals for use in the diagnosis and therapy of human cancer. Thus the therapeutic applications do indicate that radioactivity is desired as the isotopes are being suggested by the prior art. Further, in column 2, lines 11-21, there is disclosed that gold 198 and gold 199 possess radionuclidic properties that make them attractive for use in formulating therapeutic radiopharamaceuticals. Thus, the Katti, et al. patent requires a radioactive radiopharmaceutical that can be used in

treating individuals. However, there is no disclosure or suggestion that the radiopharmaceutical could be anything other than radioactive. Further, column 4, lines 33-35, there is disclosed that the gold atom can be an isotope selected from the group including gamma and beta emitting isotopes. There is no disclosure that the gold atom could be anything other than a radioactive gold.

With regard to the Fricker reference, the Office Action states that it is well-known to use gold complexes in non-radioactive form for various types of therapies, particularly the treatment of arthritis and also in treating cancer. However, is it respectfully submitted that there is no indication in the prior art that non-radioactive gold can effectively be used for treating cancer. Compounds have been used containing non-radioactive gold in attempting to treat cancer, however, the toxicity reports from these studies have indicated that gold is not effective in treating cancer and instead is toxic. Thus the indication of the Fricker reference would lead one to not utilize a gold compound as non-radioactive gold has demonstrated toxicity *in vivo*. In contradistinction, the presently claimed invention provides a non-toxic hydroxyalkylphosphine donor group bound to a non-radioactive gold atom that forms a stable gold-like complex that is not toxic. There is no suggestion to use the gold complexes for treating cancer.

It is undisputed that non-radioactive gold has been used in treating arthritis. Gold complexes have been used to treat rheumatoid arthritis patients because the gold complexes are known to help alleviate symptoms and potentially put the arthritis in remission. There is no clinical analysis that forms a linkage between the treatment of arthritis and the treatment of cancer. The individuals who

have thus far utilized gold in treating cancer have had negative results and, in fact, have experienced toxicity problems. There is no indication, and in fact, there is a teaching away from utilizing gold in treating cancer. Accordingly, there is no suggestion, for the use of non-radioactive gold complexes in treating cancer. Reconsideration of the rejection is respectfully requested.

Claims 1-4 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of United States Patent No. 5,843,993, taken in view of Fricker. A terminal disclaimer is enclosed herewith for overcoming the rejection and reconsideration of the rejection is respectfully requested.

It is respectfully submitted that the application is now in condition for allowance, which allowance is respectfully requested.

If any remaining issues exist, Applicants respectfully request to be contacted by telephone at 248-539-5050.

The remaining dependent claims not discussed above are ultimately dependent upon at least one of the independent claims discussed above. No prior art reference makes up for the deficiencies of that reference as applied against the independent claims as no prior reference discloses or suggests the invention as set forth in the independent claims, as discussed in detail above. Such a combination of references that derive the present invention can only be made through hind sight as no prior art reference discloses or even suggest the methods and compounds of the present invention, as discussed in detail above.

The Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 11-1449.

Respectfully submitted,

KOHN & ASSOCIATES

Amy E. Rinaldo
Registration No. 45,791
30500 Northwestern Hwy.
Suite 410
Farmington Hills, Michigan 48334
(248) 539-5050

Dated: October 30, 2003

CERTIFICATE OF MAILING

Express Mail Mailing Label No.: EL 976 237 580 US

I hereby certify that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, Mail Stop Responses/No Fee on October 30, 2003.

Marie M. DeWitt